STDs in Adolescents and Young Adults

Public Health Impact

Compared to older adults, adolescents (10- to 19-year-olds) and young adults (20- to 24-year-olds) are at higher risk for acquiring STDs for a number of reasons: they may be more likely to have multiple (sequential or concurrent) sexual partners rather than a single, long-term relationship; they may be more likely to engage in unprotected intercourse; and they may select partners at higher risk. In addition, for some STDs, for example *Chlamydia trachomatis*, adolescent women may have a physiologically increased susceptibility to infection due to increased cervical ectopy. During the past two decades, the age of initiation of sexual activity has steadily decreased and age at first marriage has increased, resulting in increases in premarital sexual experience among adolescent women and in an enlarging pool of young women at risk.[1-3] In addition, the higher prevalence of STDs among adolescents reflects multiple barriers to quality STD prevention services, including lack of insurance or other ability to pay, lack of transportation, discomfort with facilities and services designed for adults, and concerns about confidentiality.

Observations

- Numerous prevalence studies in various clinic populations have shown that sexually active adolescents have high rates of chlamydial infection[4,5]. The Regional Infertility Prevention Projects that perform large-scale screening for chlamydial infections among women attending family planning clinics demonstrate that younger women consistently have higher positivity rates of chlamydia than older women, even as prevalence declines. An example is the Region X Project, which has screened women since 1988 (Figure J).
- Among women, 15- to 19-year-olds had the highest rate of gonorrhea in 1999 compared to all other age categories (Figure P, Table 12B). In addition, 20- to 29-year-old women had the highest rates of primary and secondary syphilis in 1999 (Figure R, Table 23B). Among men, 20- to 24-year-olds had the highest rate of gonorrhea and third highest rate of primary and secondary syphilis (Figures Q and S, Tables 12B and 23B).
- Rates of gonorrhea among male adolescents generally decreased between the years 1995 and 1999 (Table 12B). In the 10- to 14-year-old group, the rate for young men remained stable at 8.4 cases per 100,000 males between 1998 and 1999. In the 15- to 19-year-old group, the rate declined from 503.2 cases per 100,000 males in 1995 to 341.1 cases per 100,000 males in 1999, a 32% decrease. The 1999 rate for this male adolescent age group was slightly less than the rate of 347.0 cases per 100,000 males reported in 1998. Among young adult men in the 20- to 24-year-old group, the rate of gonorrhea increased between 1998 and 1999 (576.4 and 585.6 cases per 100,000 males respectively). However, the rate in this age group in 1999 is 10% lower than the rate of 653.8 cases per 100,000 males reported for men aged 20- to 24-years in 1995.

- Gonorrhea among female adolescents and young adults aged 10- to 19-years also decreased between 1995 and 1999 (Table 12B). In the 10- to 14-year-old group, the rate for females decreased 24% during this period from 71.7 cases per 100,000 females in 1995 to 54.6 cases per 100,000 females in 1999. In the 15- to 19-year-old group, the rate declined by 22% from 847.8 to 738.1 cases per 100,000 females between 1995 and 1999. In addition, the rates for female adolescents in these age groups decreased between the years 1998 and 1999. Among young adult women in the 20- to 24-year-old group, the rate of gonorrhea increased by 1.5% from 635.1 to 644.9 cases per 100,000 females between 1998 and 1999. The 1999 rate for women in this age group was 5% greater than the age-group specific rate of 611.6 cases per 100,000 females reported in 1995.
- In 1999, the highest age-specific gonorrhea rates among women and the third highest rates among men were in the 15- to 19-year-old group (Figure 16).
- Since 1990, approximately 20,000 female Job Corps entrants have been screened each year for chlamydia. The Job Corps, administered by the U.S. Department of Labor at more than 100 sites throughout the country, is a job training program for economically disadvantaged youth aged 16 through 24 years. Among women entering the Job Corps from 32 states, the District of Columbia, and Puerto Rico, in 1999, based on their place of residence just before program entry, the median state-specific chlamydia prevalence was 11.1% (range, 5.7% to 18.9%) (Figure K). Chlamydial infection is widespread geographically and highly prevalent among these economically disadvantaged young women.
- Since 1996, approximately 25,000 female recruits have been screened at entry in the U.S. Army at basic training in Fort Jackson, South Carolina.[6] All tests are performed at the Johns Hopkins University Chlamydia Research Laboratory on urine specimens. Among women aged 17 to 37 years entering the Army in 1999, based on their state of residence before entry, the overall state-specific chlamydia prevalence was 9.9%. State-specific prevalence ranged from 4.1% to 19.6% (Figure L).
- Among men aged 17 to 37 years entering the Army in 1999, based on their state of residence before entry, the overall chlamydia prevalence was 4.7%. State-specific chlamydia prevalence ranged from 1.1% to 10.3% (Figure M).
- Data from Job Corps centers submitting gonorrhea specimens to the national contract laboratory from female students aged 16 to 24 years indicate a high prevalence of gonococcal infection in this population. Specimens from at least 100 students from each of 14 states were tested by the contract laboratory; the median state-specific gonorrhea prevalence was 3.6% (range, 0.9% to 9.4%) in 1999 (Figure N).

[1]Centers for Disease Control and Prevention. Premarital sexual experience among adolescent women – United States, 1970-1988. *MMWR* 1991;39:929-32.

[2]Centers for Disease Control and Prevention. Pregnancy, Sexually Transmitted Diseases and Related Risk Behaviors Among U.S. Adolescents. Atlanta: Centers for Disease Control and Prevention, 1994. Adolescent Health: State of the Nation Monograph Series, No. 2. CDC Publication No. 099-4630.

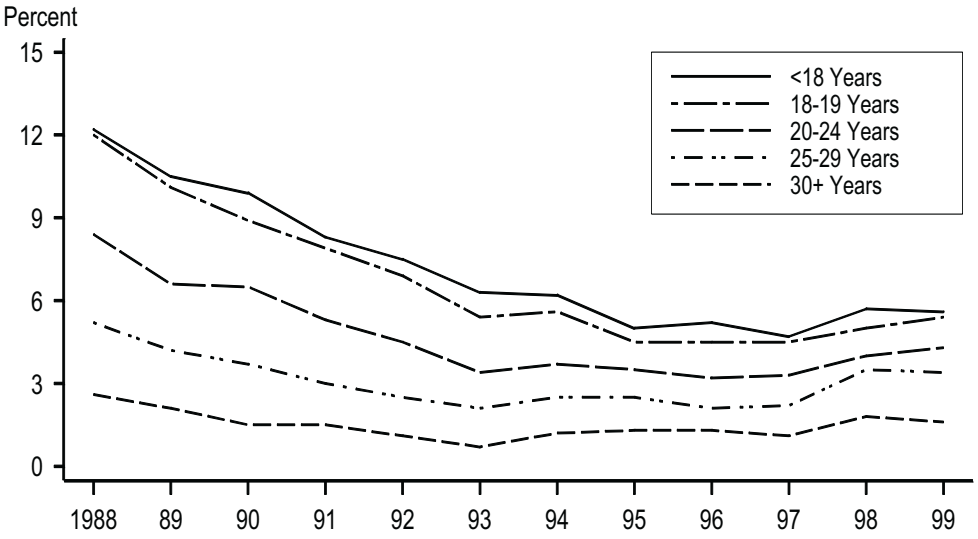
[3]Forrest JD. Timing of reproductive life stages. *Obstet Gynecol* 1993;82(1).

[4]Centers for Disease Control and Prevention. Recommendations for the prevention and management of *Chlamydia trachomatis* infections, 1993. *MMWR* 1993;42(No. RR-12).

[5]Lossick J, Delisle S, Fine D, Mosure D, Lee V, Smith C. Regional program for widespread screening for *Chlamydia trachomatis* in family planning clinics. In: Bowie WR, Caldwell HD, Jones RP, et al., eds. Chlamydial Infections: Proceedings of the Seventh International Symposium of Human Chlamydial Infections, Cambridge, Cambridge University Press 1990, pp. 575-9.

[6]Gaydos CA, Howel MR, Pare B, et al. *Chlamydia trachomatis* infection in female military recruits. *N Engl J Med* 1998;339:739-44.

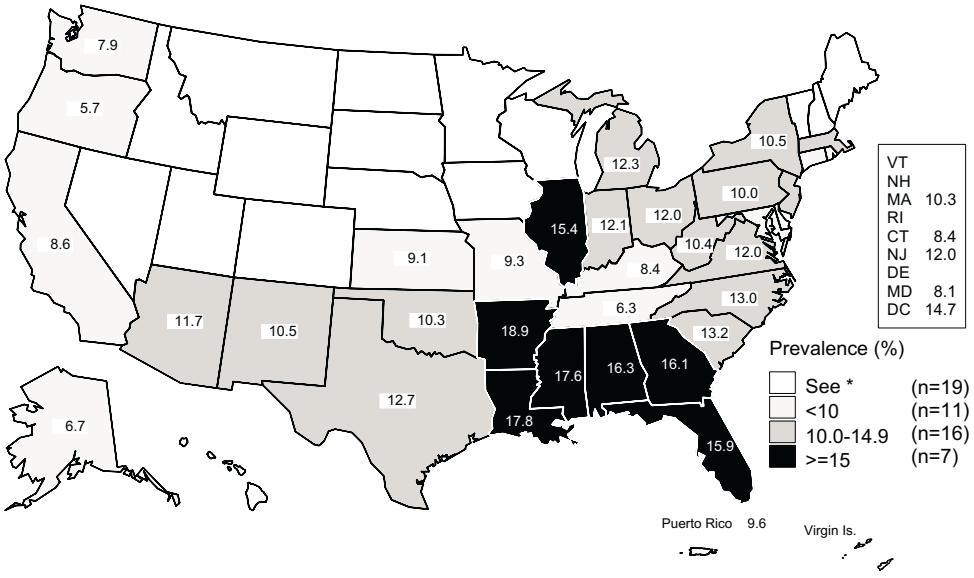
Figure J. Chlamydia — Positivity among women tested in family planning clinics by age group: Region X, 1988–1999



Note: Women who met screening criteria were tested. Trends not adjusted for changes in laboratory test method in 1994 and 1999 and associated increases in test sensitivity.

SOURCE: Regional Infertility Prevention Program: Region X Chlamydia Project (Alaska, Idaho, Oregon and Washington)

Figure K. Chlamydia — Prevalence among 16-24 year-old women entering the U.S. Job Corps by state of residence, 1999

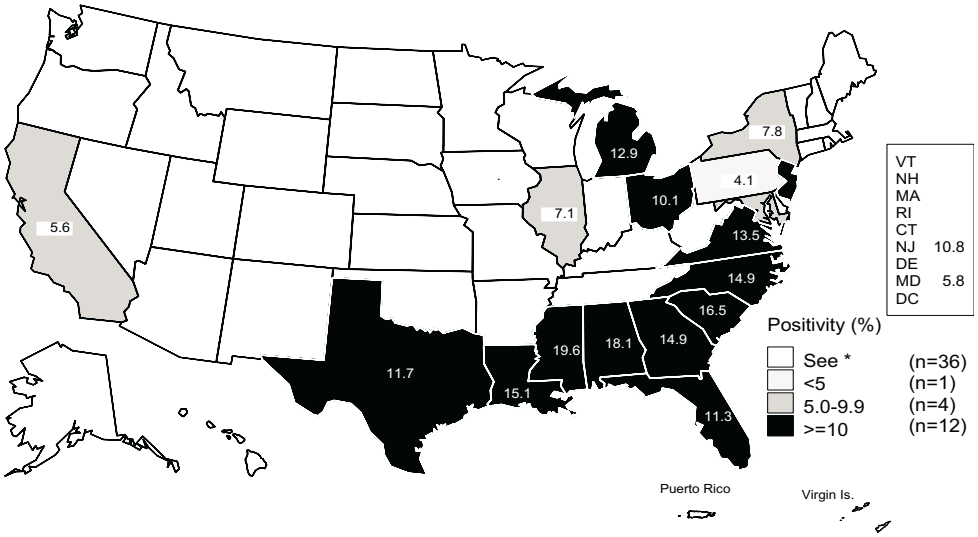


*Fewer than 100 women residing in these states and entering the U.S. Job Corps were screened for chlamydia in 1999.

Note: The overall chlamydia prevalence among female students entering the U.S. Job Corps in 1999 was 11.5%.

SOURCE: U.S. Department of Labor

Figure L. Chlamydia — Positivity among 17-37 year-old women entering the U.S. Army by state of residence, 1999

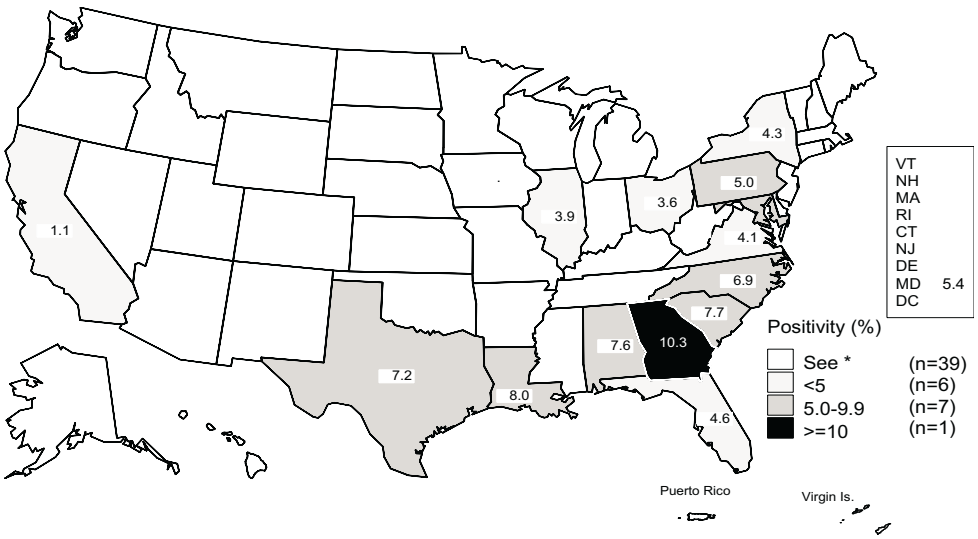


*Fewer than 100 women residing in these states and entering the U.S. Army were screened for chlamydia in 1999.

Note: Screening female recruits from January - July only. Overall positivity was 9.9%.

SOURCE: Johns Hopkins University Chlamydia Research Laboratory (funding initiative: Office of Defense Women's Health Research)

Figure M. Chlamydia — Positivity among 17-37 year-old men entering the U.S. Army by state of residence, 1999

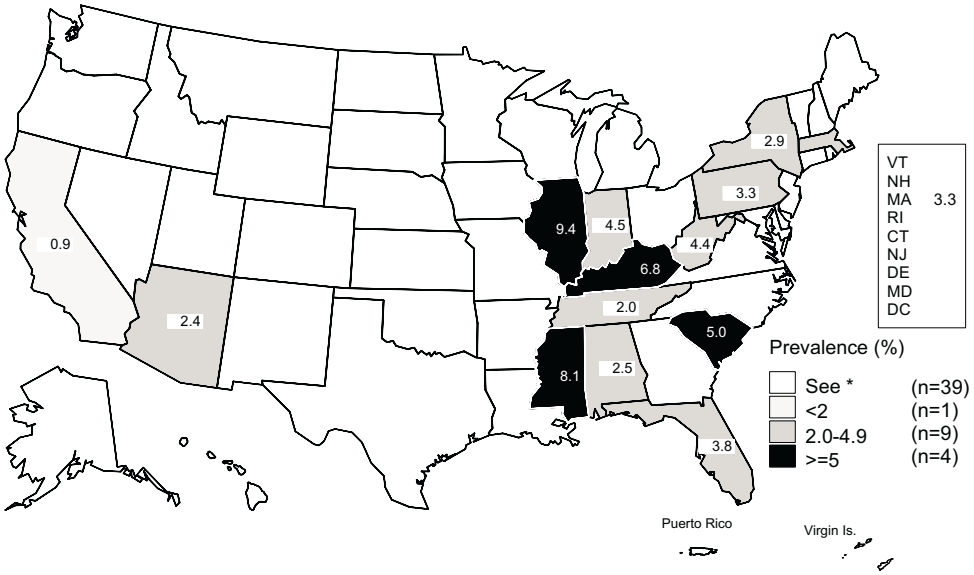


*Fewer than 100 men residing in these states and entering the U.S. Army were screened for chlamydia in 1999.

Note: Screening male recruits from January - February and August - November only. Overall positivity was 4.7%.

SOURCE: Johns Hopkins University Chlamydia Research Laboratory (funding initiative: Aberdeen Proving Ground)

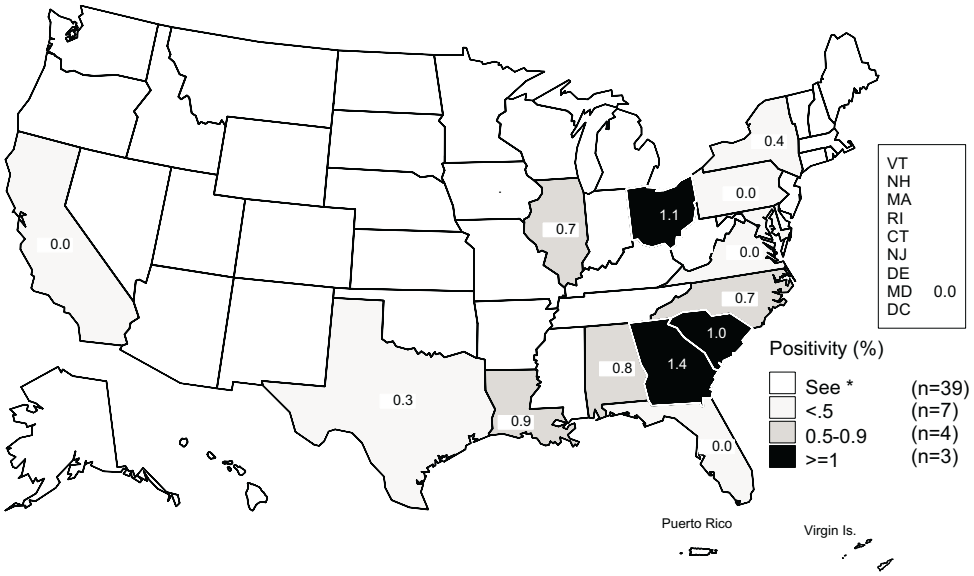
Figure N. Gonorrhea — Prevalence among 16-24 year-old women entering the U.S. Job Corps by state of residence, 1999



*Fewer than 100 women residing in these states and entering the U.S. Job Corps were screened for gonorrhea by the national contract laboratory in 1999.

Note: Many Job Corps centers test female students for gonorrhea using local laboratories; these results are not available to CDC. For this map, gonorrhea test results for students at centers submitting specimens to the national contract laboratory were included if the number of gonorrhea tests submitted was greater than 90% of the number of chlamydia tests submitted.

Figure O. Gonorrhea — Positivity among 17-37 year-old men entering the U.S. Army by state of residence, 1999



*Fewer than 100 men residing in these states and entering the U.S. Army were screened for chlamydia in 1999.

Note: Screening male recruits from January - February and August - November only. Overall positivity was 0.4%.

SOURCE: Johns Hopkins University Chlamydia Research Laboratory (funding initiative: Aberdeen Proving Ground)

Figure P. Gonorrhea — Age-specific rates among women 10-44 years of age: United States, 1981–1999

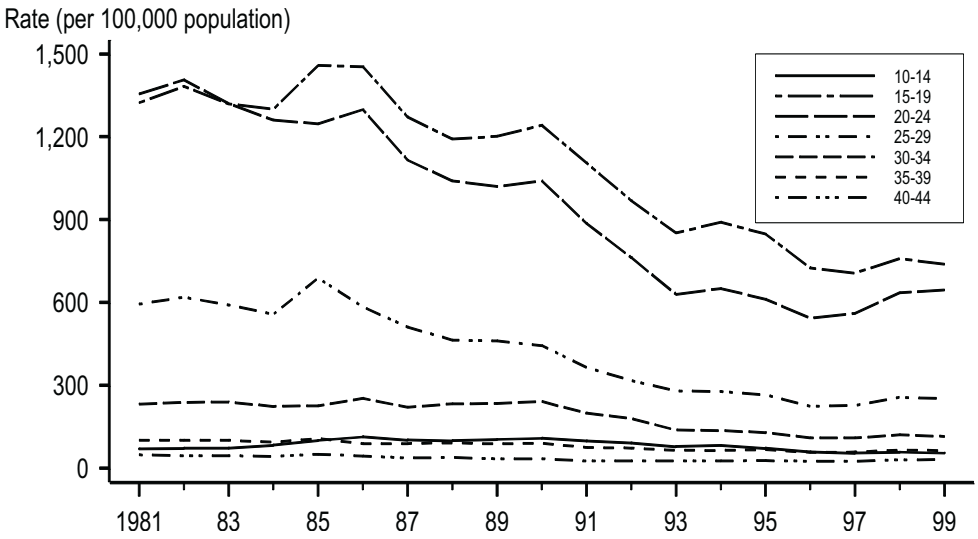


Figure Q. Gonorrhea — Age-specific rates among men 10-44 years of age: United States, 1981–1999

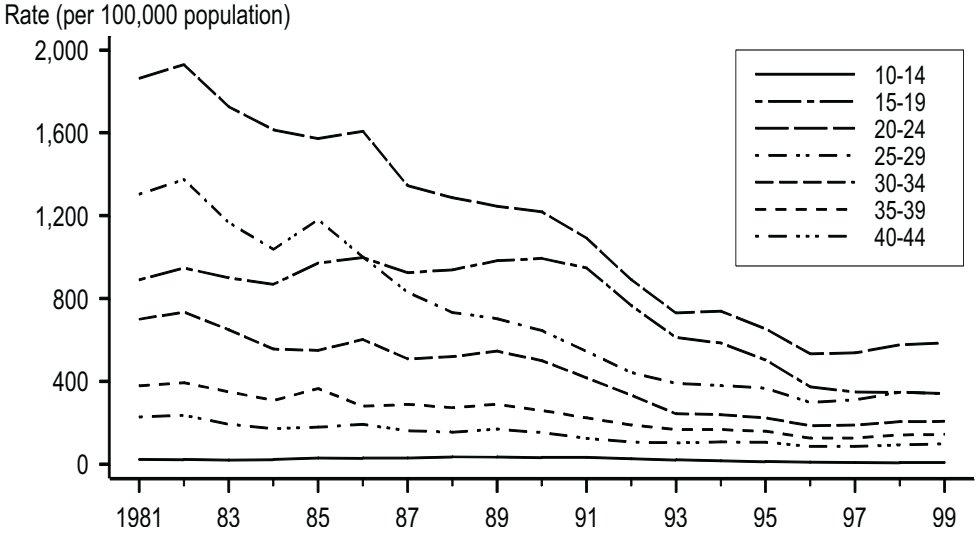


Figure R. Primary and secondary syphilis — Age-specific rates among women 10-44 years of age: United States, 1981–1999

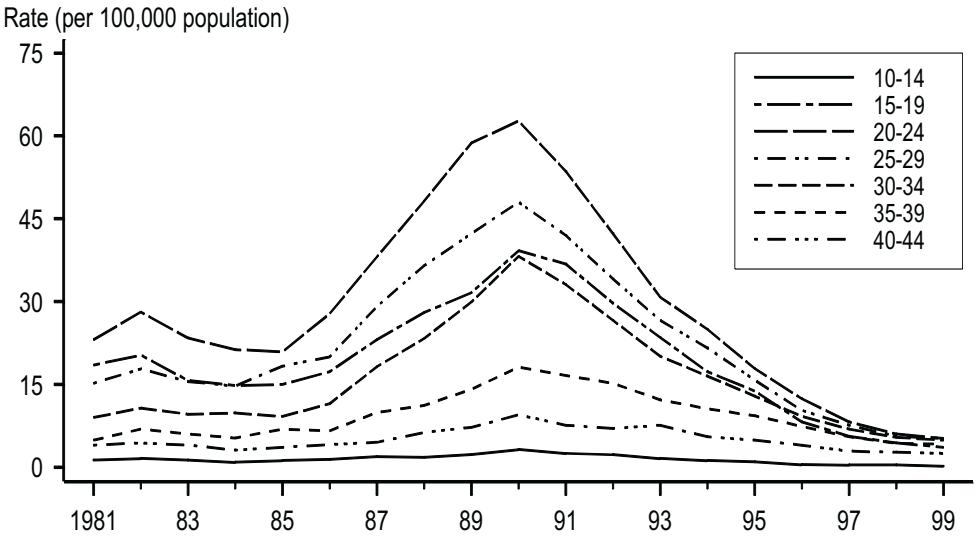


Figure S. Primary and secondary syphilis — Age-specific rates among men 10-44 years of age: United States, 1981–1999